

MINNESOTA, *continued.*

school that is sufficient to ensure access to basic telephone service from each classroom and other areas within the school, as determined by the school board. Each company must set a flat rate for this additional service that is less than the company's flat rate for an access line for a business and the same as or greater than the company's flat rate for an access line for a residence in the same local telephone service exchange. When a company's flat rates for business and residence are the same, the company has to use the residential rate for service to schools under this section.

A HISTORY OF THE EDUCATIONAL AND TELECOMMUNICATIONS INFRASTRUCTURE PURSUITS IN *NEW JERSEY*

A major feature of the New Jersey Telecommunications Act of 1992 (NJAct) is that it declares that a local exchange telecommunications company may petition the New Jersey Board of Regulatory Commissioners (Board) to be regulated under an alternative form of regulation and that under certain conditions, the Board may approve the plan or approve the plan with modifications. In addition, the NJAct requires the Board to submit a report to the Governor and Legislature reviewing the implementation of the provisions of the NJAct. In January of 1994, the Board issued its response to the NJAct.

This response included a detailed description of New Jersey Bell's alternative form of regulation and network deployment plan, both approved by the Board. This alternative form of regulation is a streamlined approach to regulation that employs a rate adjustment mechanism based on a predetermined formula. There is also an incentive for New Jersey Bell to share excess earnings. As a part of this alternative form of regulation, the Board ordered that residential basic service and low use message rate service rates remain capped until the year 2000.

It is envisioned by the Board that employing this form of incentive regulation will significantly lessen the regulatory costs of New Jersey Bell. Thus, New Jersey Bell is expected to meet its commitment to the approved deployment plan which is estimated to cost an additional \$1.5 billion through the first phase (through 1999).

Given that, as of 1993, 99 percent of all New Jersey Bell network access lines had SS7 availability, the network deployment plan calls for the following:

- a. *Digital switching to be available to all access lines by 1998.*
- b. *Fiber optic deployment completed by 2010.*
- c. *100 percent deployment of Advanced Intelligent Network (AIN) by 1998.*

According to the Board, AIN deploys digital switching and signaling systems and provides call routing and data base access services. In general, among other things, AIN services allow customers to program the public switched network to forward their calls automatically to different locations depending on the time of day.

NEW JERSEY, *continued.*

- d. *100 percent deployment of NarrowBand by 1998.*

The Board also discusses NarrowBand Digital Services, stating that the NarrowBand Digital Services are switching technologies which enable services to meet the requirements of customers who use any combination of work stations, personal computers, FAX machines, and telephones.

- e. *100 percent deployment of WideBand by 1999.*

The Board views the next technology level as WideBand Digital Services. Among other things, the WideBand capabilities are expected to allow students to remotely access multimedia information, including video, from home or school.

- f. *100 percent deployment of BroadBand by 2000.*

BroadBand is the final level of technology under the plan. The complete scope of BroadBand services is not known because all of the applications have not yet been developed. BroadBand provides the full range of high definition TV as well as two-way interactive capabilities.

In keeping with the deployment plan, New Jersey Bell is initiating trials for distance learning, telecommuting, and video dialtone.

A HISTORY OF THE EDUCATIONAL AND TELECOMMUNICATIONS INFRASTRUCTURE PURSUITS IN *NEW YORK*

New York's Assembly Bill No. 8264 was enacted in June of 1995. In the bill, certain provisions pertain to providers of last resort as defined as,

... the responsibility to offer basic local exchange service to all consumers who request it and a duty to adhere to the evolving definition of basic service. In each geographic area of the state, as defined by the Commission, the Commission shall designate at least one provider as the provider of last resort and adopt procedures for changing or terminating such designations.

Companies designated as providers of last resort by the New York Commission are required to make an infrastructure commitment in writing to the Governor and the Commission. Those companies must invest in the improvement and development of the state telecommunications infrastructure in the manner specified by the bill.

A telecommunications provider designated as provider of last resort will also be subject to the system of financial support for universal service established by the Commission. The universal service fund will be funded by a statewide uniform charge, at rates and on services determined by the Commission, payable by all telecommunications providers that have access to the customer base. The Universal Service Fund will include the amount of \$100,000,000 to be collected annually for the Telecommunications Infrastructure Fund.

The bill also created the Telecommunications Infrastructure Fund Board which administers the Fund and may award grants and loans in accordance with the criteria set forth in the bill. The advisory board and the section of the law pertaining to the Telecommunications Infrastructure Fund are due to expire and be deemed repealed on September 1, 2001.

Finally, Bill No. 8264 included specific references to educational infrastructure. Upon request by an educational institution library, a public or not-for-profit hospital, or a primary health care provider, the carrier of last resort must provide broadband services. In fact, the New York Commission was directed to promulgate rules and regulations that require dominant carriers to file tariffs containing reduced rates for telecommunications services that the Commission finds are directly related to distance learning activities or are used by educational institutions in the state.

A HISTORY OF THE EDUCATIONAL AND TELECOMMUNICATIONS INFRASTRUCTURE PURSUITS IN *NORTH CAROLINA*

Through legislation and a cooperative effort between the state and the telecommunications industry, North Carolina has achieved what it refers to as "one of the nation's most advanced telecommunications infrastructures." As of December 1993, nearly 90 percent of North Carolina's 3.5 million access lines were served by digital central offices.

In 1991, the State of North Carolina launched "Vision Carolina," a public-private partnership that uses fiber optics to link sixteen sites including high schools, community colleges, universities, and a medical center. This was a joint effort with BellSouth, Northern Telecom, the state, and various other organizations.

Another North Carolina public-private partnership is the copper-based linking of Appalachian State University to public schools in six counties for distance learning applications. North Carolina affirms that this distance learning project named "Impact North Carolina" is the first in the country to use ISDN.

In another part of the state, the "VISTAnet" project links super-computers with fiber optics and a prototype mega-switch enabling medical diagnoses from distant locations.

In May of 1993, the Governor of North Carolina announced a ten-year plan called the "North Carolina Information Highway," to be designed and deployed by Southern Bell, GTE, and Carolina Telephone. The project has been characterized as extremely ambitious in that it is expected to be the country's first use of asynchronous transfer mode (ATM) switching technology and SONET transport to deliver advanced broadband communications services. Sites will include government agencies, state universities, the "CONCERT" interactive video network site, and several other pilot projects. The "CONCERT" project, which connects over 18,000 computers and workstations in more than sixteen universities, medical schools, and research facilities, is a part of the Internet network.

The North Carolina Utilities Commission (NCUC) believes that the North Carolina Information Highway will provide benefits to education, health care, crime control, and economic development by building on the previous projects undertaken in North Carolina and expanding the ability of the state infrastructure to provide distance learning and telemedicine.

NORTH CAROLINA, *continued*,

A good example is the East Carolina University School of Medicine's operation of a dedicated T1 link for telemedical services. The North Carolina Department of Corrections has participated in the program which for two years has provided telemedicine over copper based T1 lines. Starting in December of this year, the East Carolina University's remote hospital sites will migrate from a T1 network to an Asynchronous Transfer Mode connection on the North Carolina Information Highway.

The NCUC also envisions that the state will benefit from such things as video court arraignments. Finally, North Carolina expects that its new and improved infrastructure will play a significant role in attracting and retaining industry.

In pursuing this objective of economic development, North Carolina postulated that if businesses were required to pay the full price for infrastructure development, the state would achieve less than the level of economic development for which it was striving. Thus, the State of North Carolina signed up as an "anchor tenant," and in this manner is funding a portion of the deployment itself. NCUC saw several advantages to public funding, including quicker deployment.

A HISTORY OF THE EDUCATIONAL AND TELECOMMUNICATIONS INFRASTRUCTURE PURSUITS IN *TENNESSEE*

In 1989, the Tennessee Public Service Commission (TPSC) created a task force that developed the Tennessee Telecommunications Master Plan, a ten-year master plan for accelerated deployment of advanced network technology. The TPSC ultimately adopted the plan which called for:

- a. SS7 in all exchanges by 1993 (In 1994 the TPSC confirmed that SS7 was available in all exchanges and 98 percent of central offices.);
- b. 100 percent ISDN available in all urban exchanges by 1998, in all rural exchanges by the year 2000 (According to the TPSC, during 1994 ISDN was available to 69 percent of all access lines from the serving central office.)
- c. All central offices to have fiber inter-office infrastructure by 1995;
- d. Full digital switching by 1998; and
- e. Broadband to 10 percent of the customers by the year 2000 (According to the TPSC, plans call for more advanced switched broadband to be available to certain business customers in 1995.)

The Tennessee Telecommunications Master Plan recommended that local exchange carriers which committed to the plan should be able to operate under an earnings sharing program while exercising pricing flexibility. In this manner, the task force envisioned that local exchange carriers would be motivated to make appropriate infrastructure investments. On January 10, 1993, the TPSC's new Regulatory Reform Rule became effective, allowing local exchange carriers the option of operating under regulatory reform or remaining under traditional rate base, rate of return regulation.

Tennessee has also relied on other means to actively encourage infrastructure improvements. During the course of a 1990 South Central Bell earnings review, accounting allocations were made which provided funds to be used towards the implementation of the new network called "FYI Tennessee." The use and potential use of this network spawned many educational trials across the state of Tennessee. For instance, Nashville's Carter-Lawrence